The Michigan
Middle School Study

Report to Participating Schools and Districts

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Since the fall of 1994 we have been conducting a research study aimed at understanding how the learning environment influences early adolescent motivation and learning in four Michigan school districts. We have observed classrooms, given surveys to students and teachers, interviewed students and their parents, and collected information from school records. We began this study when the participating students were in the fifth grade in elementary school (fall of 1994) and we will be collecting data from these same students for the eighth time when they are in the ninth grade in high school (spring of 1999).

The information that we present in this report is focused in particular on the transition from elementary to middle school, how changes in the learning environment when students move to middle school are related to their motivation and approaches to learning, and whether the middle school reforms, which you are all undertaking, seem to be working. In addition, we describe for you some of the studies that have linked classroom practices to students' beliefs and behaviors. Finally, we describe some of our findings regarding student gender and race. This study has generated a great deal of information, and we can present only a portion of it here.

You will be interested to know that the school districts participating in this study are remarkably similar in terms of the middle school reforms that have been undertaken. All are "forward-thinking" school districts, dedicated to implementing the middle school philosophy and to providing accurate information to the communities they serve about the effects of the changes that have been made. It is not surprising that an examination of the results reveals few differences across schools or across districts. For that reason, we have combined the data from the 21 elementary schools and 10 middle schools that have participated in the study. Any findings that are unique to a particular school or district will be reported separately.

The Transition from Elementary to Middle School

Fifteen years ago Dr. Midgley was involved in a major study in 12 Michigan school districts focusing on the transition from elementary to junior high school. Findings from that study contributed to *Turning Points* - the Carnegie Foundation document that has been used to guide middle school reform in many school districts. We want to summarize the recommendations that emerged from that earlier study in light of what we are finding in the study that included your school district.

First, here are some of the recommendations for middle school reform that were included in the Carnegie Report and in many concept papers put together by State Departments of Education:

I. Improve interpersonal relations and students' sense of community

- Keep students together with the same teacher and the same peer group for several periods during the school day

- Develop advisory programs so that every student is linked with a teacher/advisor

- Initiate other reforms that will help students and teachers feel like they are a part of a caring school community

II. Provide an intellectually challenging learning environment for all students

- Require all students to take a core of academic subjects

- Eliminate or reduce the assignment of students to classes based on their ability

- Initiate other reforms that will ensure that <u>all</u> students are challenged and are learning

In the districts participating in our study, many of these recommendations have been implemented, particularly at the sixth grade level. We want to summarize for you what our data tell us about the effects of these changes, comparing our results with those from the earlier, pre-reform studies. We have good news and bad news.

First let's look at the recommendations for improving interpersonal relations and a sense of community.

Interpersonal Relations

In the studies conducted 15 years ago, both students and observers reported that the quality of the student/teacher relationship deteriorated dramatically after the transition to junior high school. Students also felt more alienated from school, and expressed more negative attitudes and fewer positive attitudes about school after they made the transition.

Considerable progress has been made in this area, as Figure 1 below depicts:
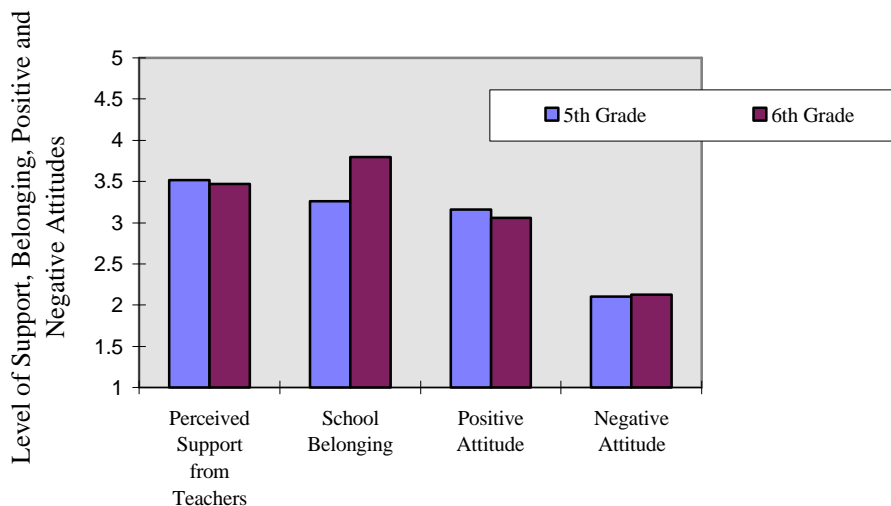

Figure 1. <u>Changes in perceived teacher support, feelings of school belonging, and positive and negative attitudes toward school in fifth and sixth grades.</u>

Items used to assess the relationship dimension include: "Can you count on your teachers for help when you need it? (perceived support from teachers), "I feel like a real part of this school" (sense of school belonging), "I often feel angry at school" (negative attitudes about school), and

"I like being in school" (positive attitudes about school). These items were measured on a scale from 1 ("not at all true") to 5 ("very true"). We always use three or more items to assess a construct, such as sense of school belonging. In that way we reduce error, and we also are able to see if students answer the various items on a scale in a consistent way. All of the scales that we describe in this report have proven to be internally consistent and valid.

Note that there is no longer a significant deterioration in the student/teacher relationship when students move to middle school, and their sense of school belonging is, remarkably, greater after the transition than before. Similarly, there is no longer a significant decline in students' positive attitudes toward school or an increase in negative attitudes after the transition.

You might be interested to know that similar findings are being reported in other middle schools implementing reforms such as small house, teaming, and advisory programs. Here, for example, is a quote from a report describing the move to the middle school model in 16 urban schools in Indiana:

"Even the most jaded of observers agree that there is little question that many of the schools 'feel better': they are, for the most part, friendlier, warmer, more relaxed, and respectful. In the best of them there is an energetic calm, more collegiality, and more focused attachments between adults and children."

That's the good news. It's very good news because our research shows that positive interpersonal relations and a sense of school belonging are strongly related to students' positive attitudes about school, self esteem, self deprecation, and feelings of anger (Figures 2 and 3). All of these constructs were assessed on a scale from 1 (low) to 5 (high).
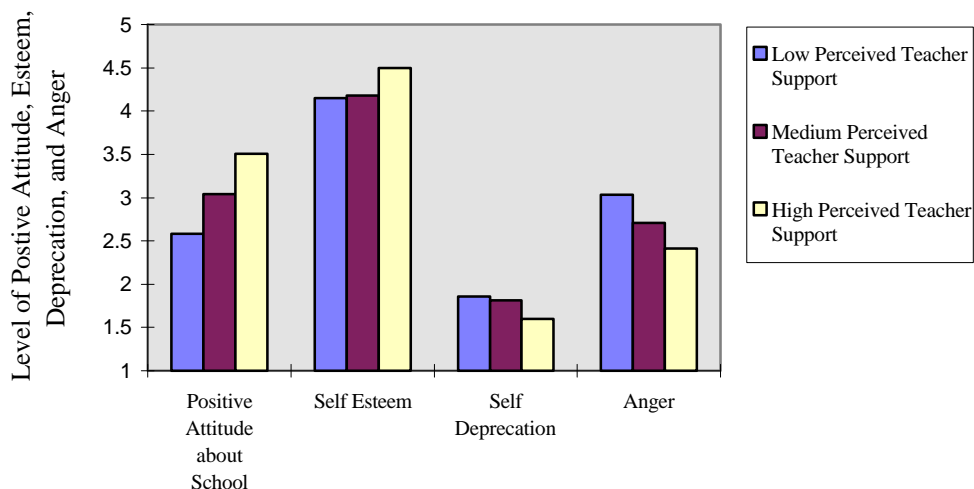

Figure 2. Perceived teacher support related to students' positive attitude about school, self esteem, self deprecation, and anger in sixth grade
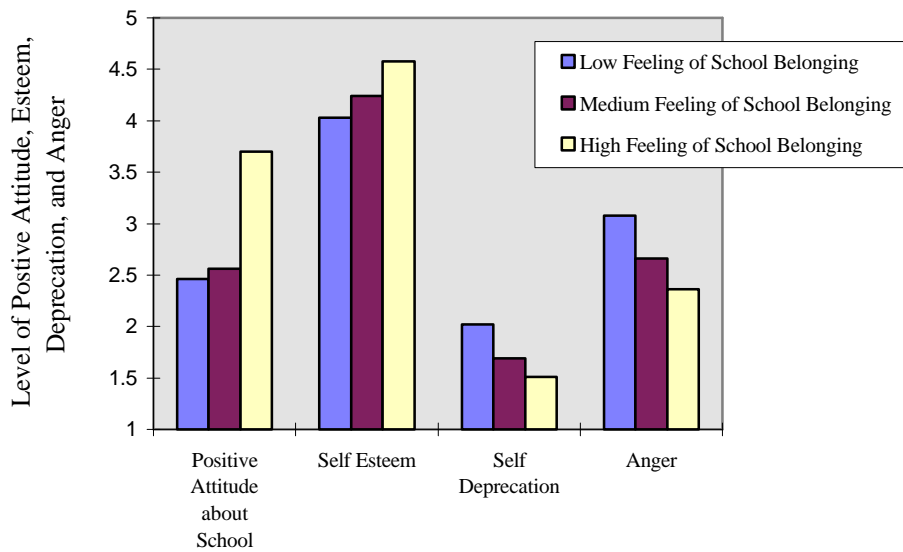
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Figure 3. <u>Feelings of school belonging related to students' positive attitude about school, self esteem, self deprecation, and anger in sixth grade.</u>

Now let's focus on the other dimension that was highlighted in the school reform documents - the academic dimension.

<u>Academic Dimension</u>

There is <u>some</u> good news.

In a number of studies that we conducted earlier, students and teachers reported that middle schools emphasized relative ability much more than did elementary schools - that is, how one student compares to another. This is worrisome because perceiving an emphasis on relative ability in the classroom and school is associated with a lot of negative outcomes, particularly during early adolescence when children are so focused on how they compare to others. In particular we find that when students perceive an emphasis on relative ability in the classroom, they also have less positive and more negative attitudes toward school, they are more likely to avoid asking for help even when they need it, and they are more likely to create reasons for not doing work or studying (self handicapping) (see Figure 4). Using a five-point scale, we assess the emphasis on relative ability and competition in the classroom with items such as: "Our teacher points out those students who get good grades as an example to all of us," and "Our teacher tells us how we compare to other students."
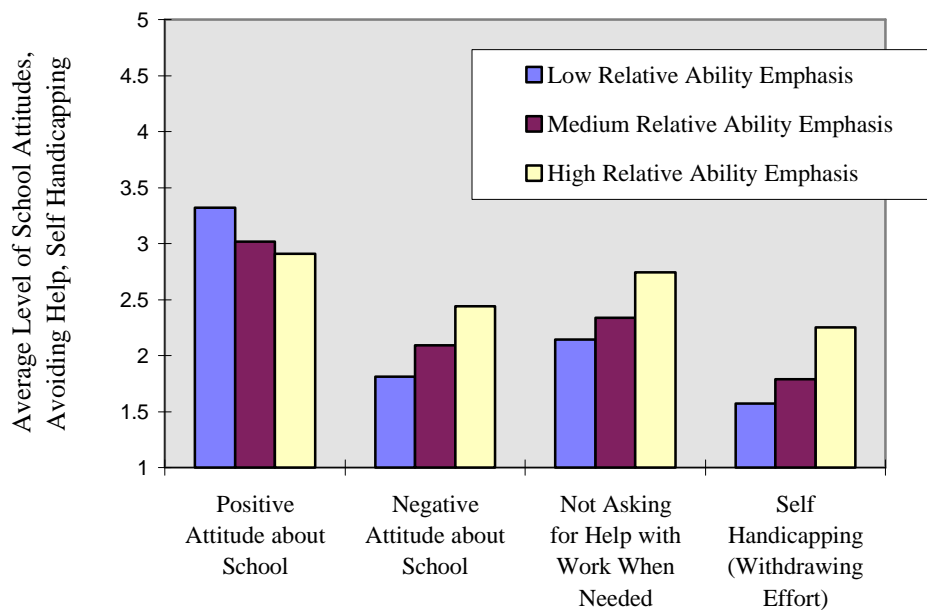
Figure 4. <u>Perceived emphasis on relative ability in school related to students' attitudes about school, avoiding asking for help, and academic self handicapping in sixth grade</u>

The good news is that students no longer perceive an increased emphasis on demonstrating their ability to others when they move to middle school (Figure 5). There is no change from elementary school. This is positive. The reforms that have been undertaken appear to be working.

Now we move to the more sobering news, and we need your help in understanding the results.

We mentioned that perceiving an emphasis on relative ability in the classroom is associated with some undesirable outcomes for young adolescents. But perceiving an emphasis on effort, improvement, and mastery in the classroom is associated with a range of positive outcomes. We use items such as these to assess students' perceptions of the emphasis on mastery and understanding in the classroom: "Our teacher wants us to understand our work, not just memorize it." and "Our teacher recognizes us for trying hard." Figure 6 depicts how students' perception of a mastery orientation in school relates to more positive attitudes about school, lower negative attitudes about school, higher academic self efficacy (confidence that you can learn and understand if you try), and self handicapping (creating reasons for not doing work or studying).
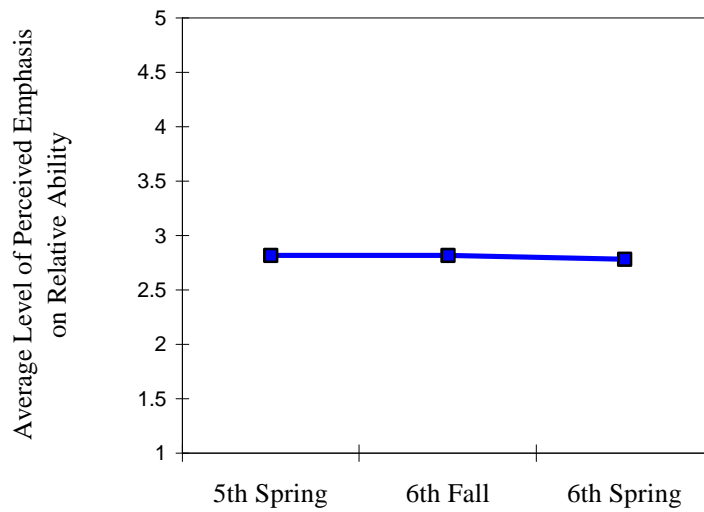
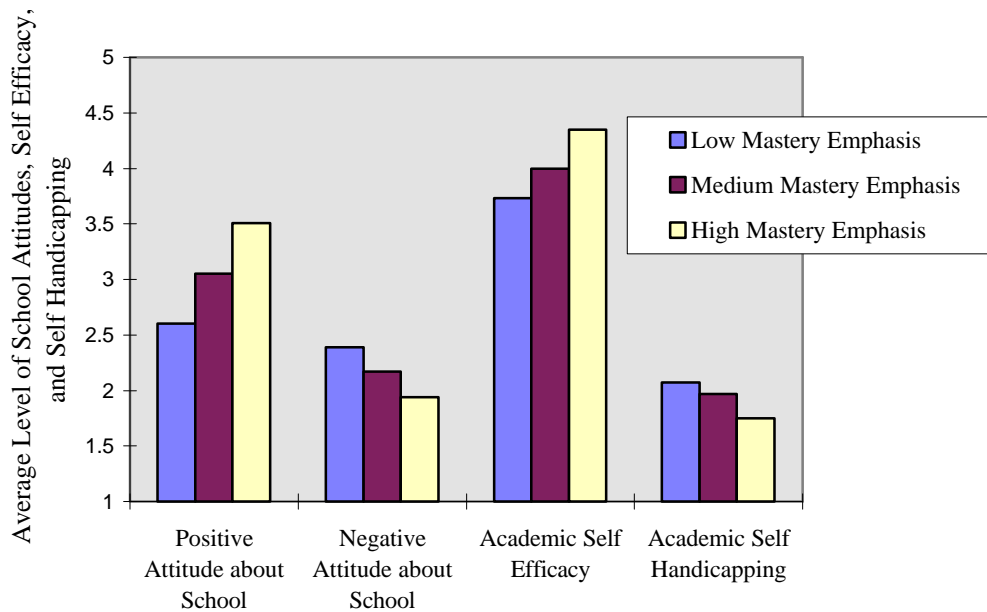Figure 5. Changes in level of perceived emphasis on relative ability in school

Figure 6. Perceived emphasis on mastery in school related to students' attitudes about school, academic self efficacy, and self handicapping in sixth grade

Because students are in several different classes in middle school, we sometimes focused on math classrooms. When we looked at the impact of a mastery focus specifically for math

classes, we found positive results as well. When students perceive an emphasis on mastery in their math class, they have greater efficacy to learn math, have higher self regulation for their math work, are less likely to avoid seeking help when they need it, and their math grades are also higher. We find that these benefits of a mastery environment hold true every year of middle school.

What happens to students' perception of an emphasis on mastery and effort when they move to middle school? Here there has <u>not</u> been a change from earlier studies. This is the bad news.

When students move to middle school, they report that the emphasis on learning, mastery, understanding, and improvement declines (Figure 7).
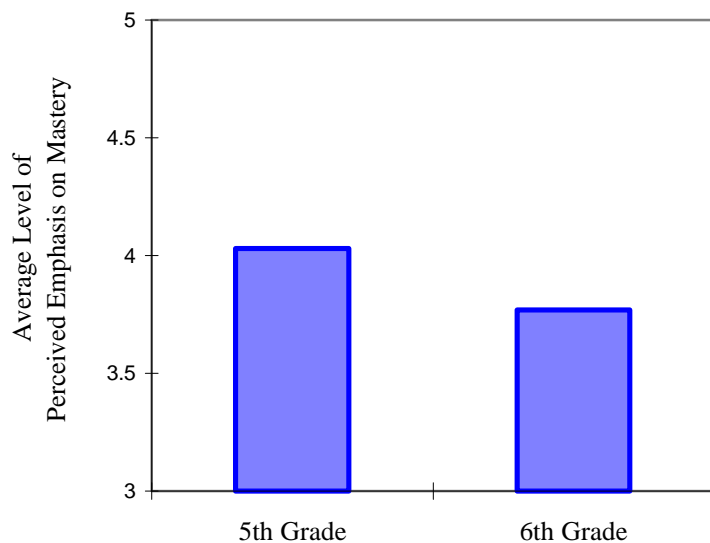

Figure 7. <u>Differences in level of perceived emphasis on mastery in school across the transition</u>

How can middle school teachers provide a learning environment that is perceived by students to emphasize hard work, improvement, and real understanding? This is much more difficult than implementing structural changes such as teaming. Here are some suggestions:

Teachers need to think about the <u>messages</u> they give to their students. "Working hard is what counts in this classroom." "Really understanding your work is what counts in this classroom." "Improving is what counts in this classroom." "Trying something really hard is valued in this classroom."

Teachers need to think about <u>strategies</u> they can use in the classroom that will emphasize mastery, understanding, and improvement. When we have talked to teachers about how to do this, these are some of the examples they have listed:

• Allowing students to redo work

- De-emphasizing mistake-free papers
- Using portfolios to assess student progress
- Using project-based approaches to the curriculum
- Integrating curriculum areas and using thematic approaches
- Recognizing effort and improvement both formally and informally
- Providing challenging, complex work to students
- De-emphasizing test scores and high grades

As we talk with teachers this year in the schools participating in our research, we hope to hear from them regarding how they emphasize mastery, understanding, challenge, and intellectual development for all students in their classrooms.

Final Comments on the Transition from Elementary to Middle School

Can middle schools enhance interpersonal relations and feelings of belonging and at the same time expect and promote academic excellence? We have attended meetings where some parents or middle school teachers pit the relationship dimension against the academic dimension. "We need to focus on promoting achievement and forget about this touchy-feely stuff. Schools are not about feelings, they're about learning." Or - "Early adolescents need to feel supported and cared for, the learning will take care of itself." We disagree with both of those hypothetical statements. We do not see this as a case of either/or. Indeed, we suggest that relationships are enhanced when students are truly learning, and learning is enhanced when students are in a caring environment.

Improving interpersonal relationships and a sense of community in school is very important. Middle schools (at least at the sixth grade level) have made changes that have had a positive effect on students. These changes should not be abandoned. Schools need to be sure that these changes are also considered at the seventh and eighth grade levels.

Reducing the emphasis on relative ability is also important, particularly during early adolescence when young people are very concerned with how they compare to others. Middle schools have taken steps to reduce the emphasis on relative ability, particularly at the sixth grade level. We hope to continue to work with teachers to figure out how to provide an intellectually challenging learning environment without emphasizing relative performance.

Changes during the Middle School Years

We know that you are also interested in changes across the middle school years. We are still analyzing those data, and will be providing more information to you soon. However, we did find that students reported a decline in support from teachers across the middle school years (we did not ask students about this in eighth grade), and positive attitudes about school declined significantly when students moved to the eighth grade (Figure 8). Additionally, we found that Hispanic students' reports of teacher support dropped more steeply than those of the other ethnic groups, but unfortunately, the sample of Hispanic students is too small to be very meaningful.
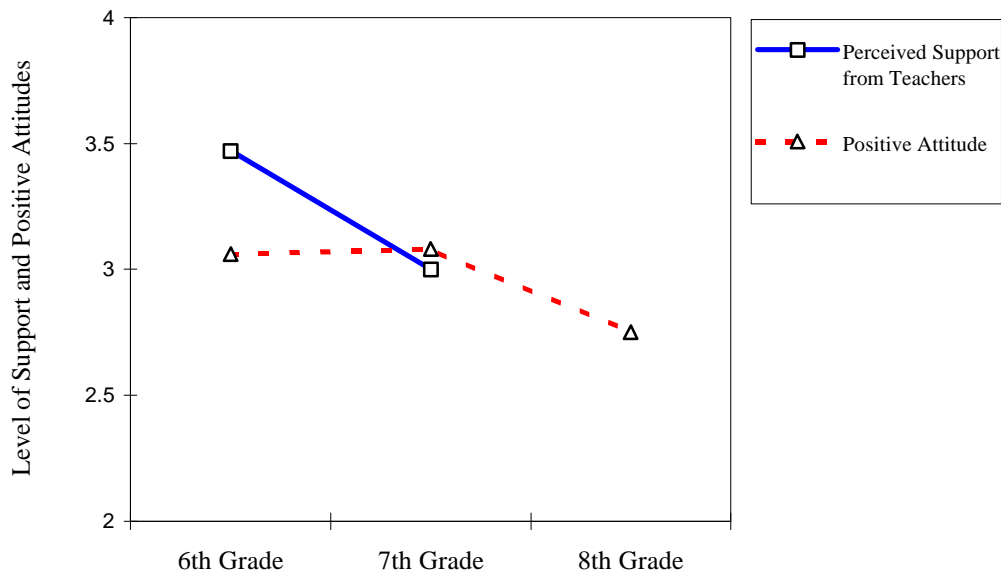
Figure 8. Change in perceived teacher support in sixth and seventh grades and changes in positive attitudes about school in sixth, seventh, and eighth grades

There was also a gradual decline in students' use of self regulated learning across the middle school years ("When other students are distracting me in class, I often can find a way to keep concentrating on my work," "When I finish my work, I check it to make sure it's done correctly") and an increase in reports of engaging in disruptive behavior from sixth to seventh grade ("My teacher gets upset with me sometimes," "I sometimes behave in a way that annoys my teacher") (Figure 9).

There was a decline in the use of self handicapping strategies from seventh to eighth grade (purposefully withdrawing effort in order to blame circumstances rather than lack of ability for poor performance) (Figure 9). It could be, that as students mature, they are less concerned about how they compare to others, and therefore less likely to come up with strategies to protect their image to others. Unfortunately, the use of these strategies during the sixth grade may permanently undermine performance. If students procrastinate or fool around when they should be studying, then performance is likely to suffer. Further, students' confidence that they can do their math work (efficacy in math) remained stable when they moved from sixth to seventh grade, and increased slightly when they were in the eighth grade (Figure 9).
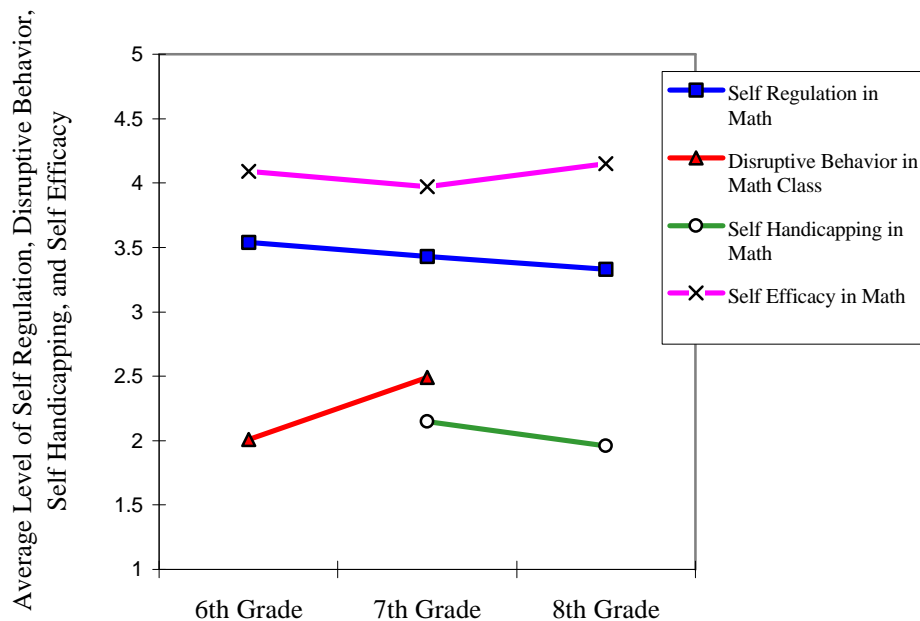
Figure 9. Change in level of self regulation, disruptive behavior in class, self handicapping, and efficacy in math

As in the earlier transition studies, we find that students' grade point averages decline significantly after they move to the middle school. This pattern holds for all students (Figures 10a, b), and we find the same patterns for math grades specifically (not shown).
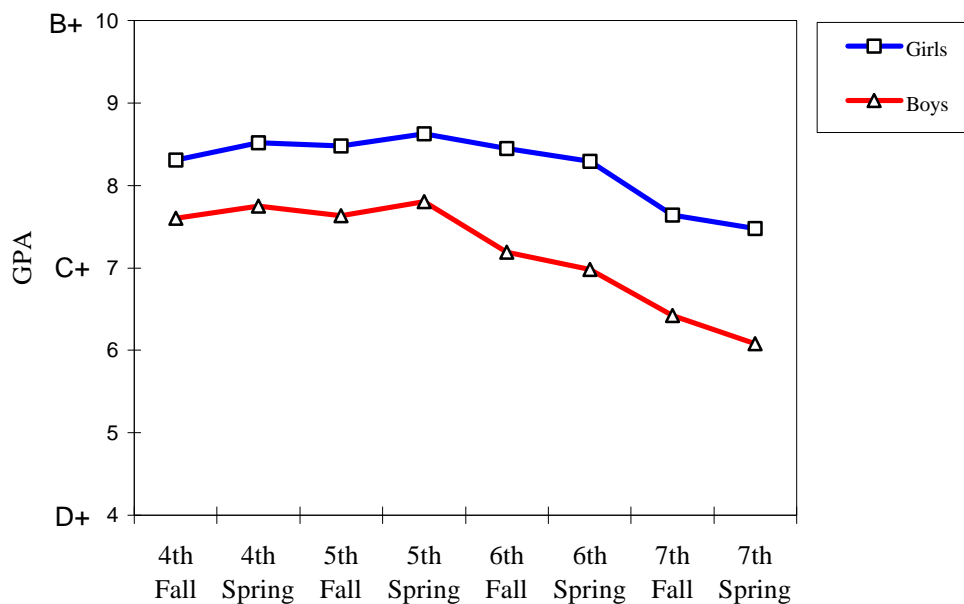

Figure 10a. Change in GPA for girls and boys from fourth through seventh grades
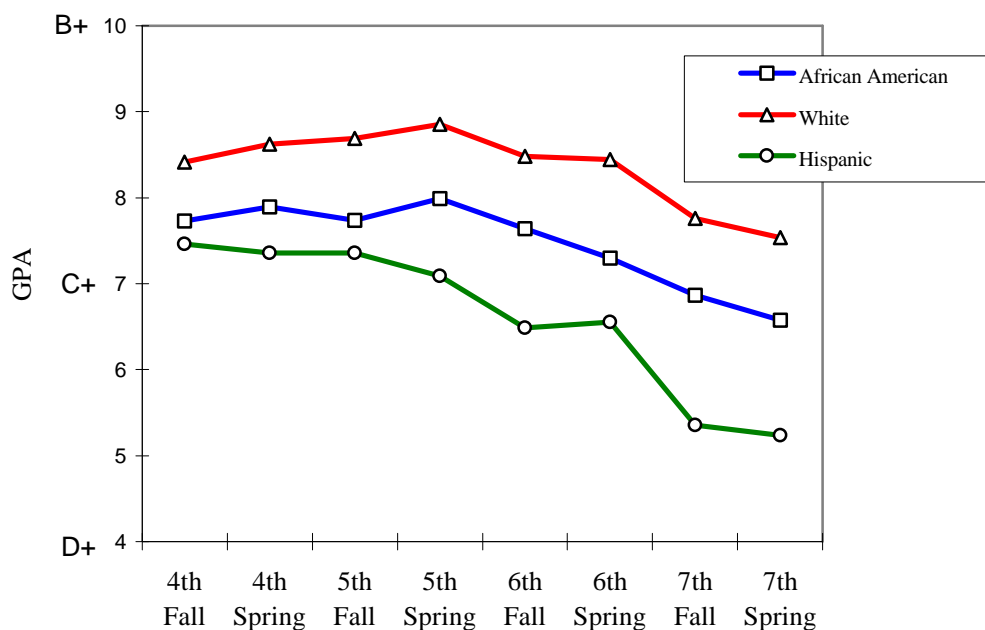
Figure 10b. Change in GPA for African American, White, and Latino students from fourth through seventh grades

One has to wonder if this is a true decline in performance or whether middle school teachers use a different standard for grading than do elementary school teachers. Many people believe that grades are a good motivator, but it is important to think about the impact on students of receiving lower grades when they move to and through middle school. If Sally is getting an A- in math in elementary school, and is working just as hard and learning just as much in middle school, but now receives a B-, what does she think? Does she think she's not as good in math as she thought she was. Does she decide not to elect advanced math courses or to consider a career that uses math? We need your insights into this. There is no easy answer. Our study adds to what has been found previously by continuing to collect information on grades as students move from sixth to seventh grade. As you can see in Figures 10a and b, this drop in grades continues when students move to the seventh grade. The decline in grades for the small number of Hispanic students in our study is particularly troublesome.

Classroom Influences on Avoidance Behaviors

During early adolescence, a number of students begin to use strategies aimed at withdrawing effort, resisting challenge and risk-taking, and avoiding seeking academic help when needed. We call these "avoidance behaviors." In our conversations with middle school teachers, they frequently describe these students and express dismay and bewilderment regarding these behaviors. Many teachers don't know what to do and researchers have provided remarkably little information to guide them.

In this section we want to present some of our findings regarding the classroom processes that are associated with avoidance behaviors in young adolescents. We did not know, when we began this study, that these findings would emerge. Occasionally people tell us that researchers find what they expect to find. Sometimes that is true. But it is often the case that research leads to new understandings and new issues to be pursued.

Avoidance behaviors are very debilitating. If a student deliberately withdraws effort, resists seeking help when it is needed, and avoids academic risk-taking and challenge, then achievement is likely to be undermined. Why do some students engage in avoidance behaviors if they are so debilitating? Students may be driven by the need to protect self worth. They may use these strategies as ways to avoid being labeled as stupid. "If I don't ask for help, then other students won't think I'm dumb." "If I don't try that difficult task, then I won't risk looking stupid if I can't do it." "If I put off studying for the test, I can say that is the reason that I didn't do well." You may know these students. In a conversation with a middle school principal, he told us - "I did that! I would fool around the night before a test, so that I could say that was the reason I didn't do so well."

Sometimes we think this is just something about individual students, and the "history" they bring with them to middle school. We were interested in seeing whether there were differences across classrooms - that is, whether students use these avoidance behaviors more in some classrooms than in others.

Avoiding asking for help even when it is needed

We wanted to know what characteristics of <u>students</u> and what characteristics of <u>classrooms</u> relate to how much students avoid seeking help when they need it. Here is an example of a question on our survey: "I don't ask questions in my math class, even if I don't understand the lesson" ("not at all true of me" to "very true of me" on a scale of 1 to 5).[1] We found that students who lacked confidence in their ability to do their work avoided seeking help the most. Thus the children who need help may avoid seeking it, a very distressing situation. We also found that characteristics of the classroom influenced how much students avoided seeking help. That is, students in some classrooms avoided seeking help when they needed it, more than students in other classrooms. We wondered if the academic environment of a classroom might help explain this. To gauge the academic environment of the classroom from students' perspectives, we averaged within each classroom the students' perceptions of the emphasis on relative ability and the emphasis on mastery and learning. We did this because there was remarkable agreement among students in a class about what they thought their classroom academic environment was like. We found that the more that the class perceived an emphasis on competition and relative ability, the more students in those classrooms avoided seeking help. In contrast, the more the class perceived an emphasis on understanding and mastery, the less students in those classrooms avoided seeking help.

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[1] Recall, some of the scales used in the middle school surveys are general ("I can do almost all my classwork if I don't give up") and some are specific to math ("I can do almost all my math work if I don't give up"). Because students may have different teachers for different subjects in middle school, we had to focus on one subject matter area in some cases. We decided to focus on math.

Self handicapping

In another study we looked at students' use of self handicapping strategies. These are strategies students use so that they can point to circumstances, rather than lack of ability, if they don't do as well on an assignment or test as they had hoped. Here is an example of a question on our survey: "Some students put off studying for a test until the last moment. Then if they don't do as well as they had hoped, they can say this is the reason. How true is this of you?" Again, we found that students use these strategies more in some classrooms than in others. We found that teachers who described using strategies that highlighted differences between high and low achievers had students in their classrooms who reported a higher average use of self handicapping strategies. Here are some examples of the questions on the teacher survey that assessed this construct: "I give special privileges to students who do the best academically," "I help students understand how their performance compares to others," and "I encourage students to compete with each other academically."

Avoiding academic challenge and risk

We also asked students about their willingness to take on academic challenge and risk. An example of an item on the survey is: "I would choose math problems I knew I could do, rather than those that might be a challenge." Again, the emphasis on learning and understanding in the classroom -- a mastery focus -- was associated with less avoidance of challenge. Here are some examples of the questions on the teacher survey that assessed this construct: "I consider how much students have improved when I give them report card grades," "I stress to my students that it's okay to make errors, as long as they are learning," and "If a student wants to redo an assignment or test, I generally will allow it."

These studies were done with students in the last year of elementary school and in middle school. It may be that in high school, students will be less affected by the emphasis on relative ability and competition in the classroom. Since our sample of students is now in the high school, we will be able to answer that question next year.

Race and Gender Differences

As we mentioned earlier, we sometimes do not find what we think we will find. In terms of race differences, and in particular differences between African American and White students, we did not find as many differences as we expected. But in comparisons of boys and girls, we found more differences than we expected.

It is important to recognize that there is a lot of variation in motivation and achievement within ethnic and gender groups, even if, on average, we find statistical differences between groups. Of course, White students are not all the same, just as African American students are not all the same. Further, although there are some statistically significant differences between White and African American (and male and female) students, the groups do overlap considerably.

Race

Most of the transition studies conducted in the late 1970s and the 1980s were conducted using middle class white samples. However, there were a couple of studies that suggested that African American students have a more difficult time during the transition to middle school than do White students. We did not find that in this study. The differences before and after the transition to middle school that we described in the first section hold for both African American and White students. In one of our districts, we have a small sample of Hispanic students. It appears that they may have a more difficult time with the transition, but the sample is small and we need to replicate the study with a larger sample.

As Figures 11a-c depict below, we find that African American students, on average, have a positive motivational profile. They feel confident that they can learn; are oriented toward learning, understanding, and improving (personal mastery goals); and report higher self regulation in their math classes than do White students. However, they also report that they use self handicapping more than do White students (Figure 11d). Nonetheless, African American students seem to be reporting that they feel ready and able to learn. When we contrast these sanguine reports with, on average, consistently low grades (refer to Figure 10b), we wonder what can explain the "achievement-motivation gap." Is the academic potential and motivational readiness of African American students not being fully tapped? Are some teachers concerned more with the relationship dimension than the academic dimension with their African American students? These are important questions, for educators want all students to achieve to their full potential. We do not have answers, and we seek your insights into this matter.
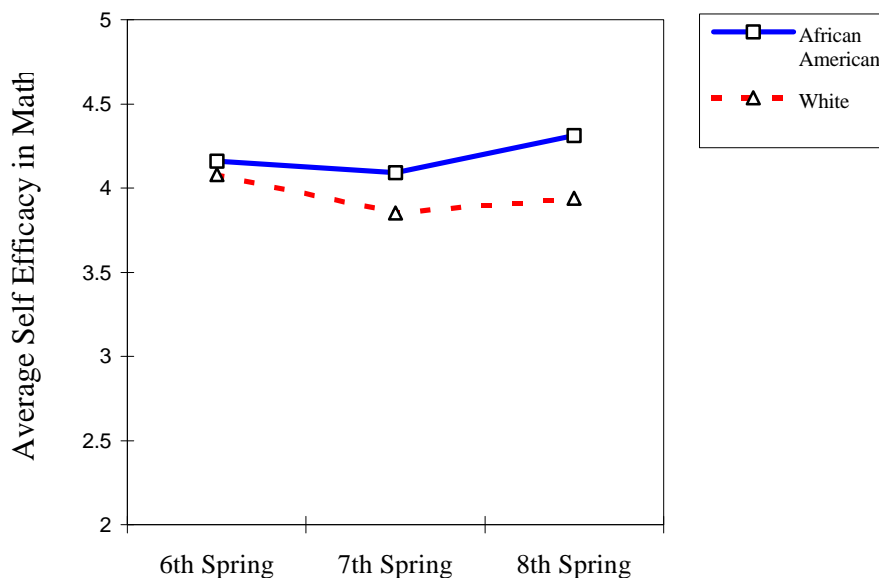

Figure 11a. Differences in self efficacy in math for African American and White students
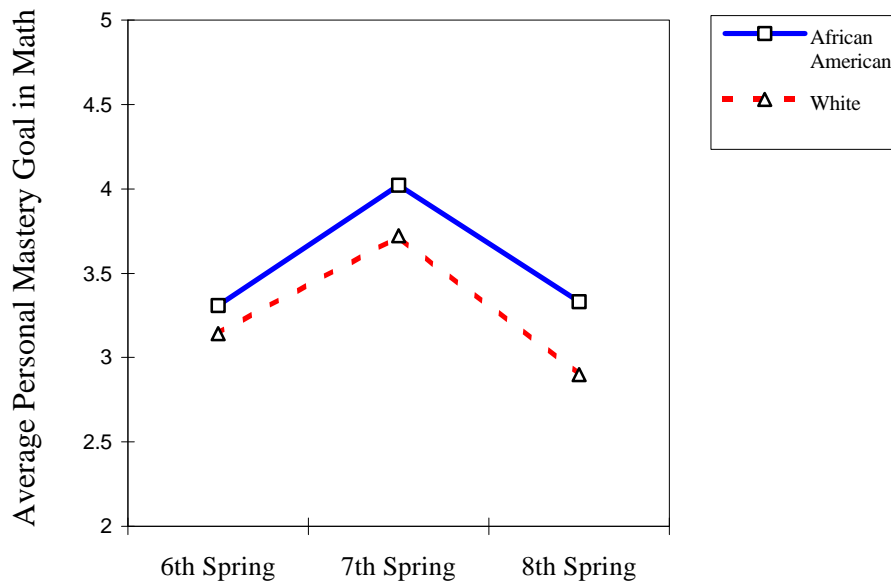
Figure 11b. Differences in personal mastery goals in math for African American and White students
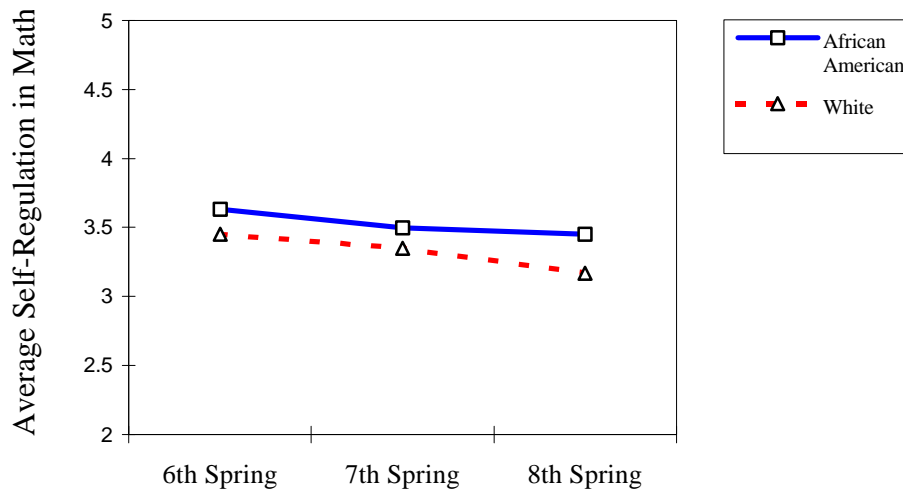

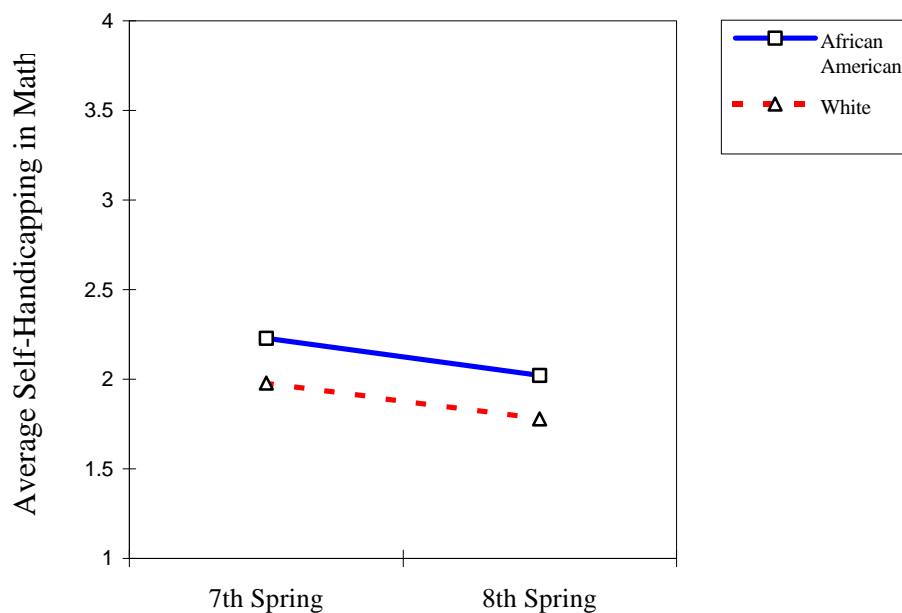Figure 11c. Differences in self regulation in math for African American and White students

Figure 11d. Differences in self handicapping in math for African American and White students

Gender

Although we did not find that girls and boys differed greatly in their adjustment to the transition to middle school, we did find that girls and boys differed on a number of constructs in both elementary and middle school. Girls felt more positively about school, and perceived more social support in schools. They also used more effective coping strategies. Boys reported more anger, disruptive behavior in the classroom, and use of avoidance strategies. However, there were no gender differences in sense of school belonging, depression, self deprecation, self esteem, academic efficacy, hopefulness, or negative attitudes about school. Figures 12 and 13 depict some of the gender differences in sixth grade.
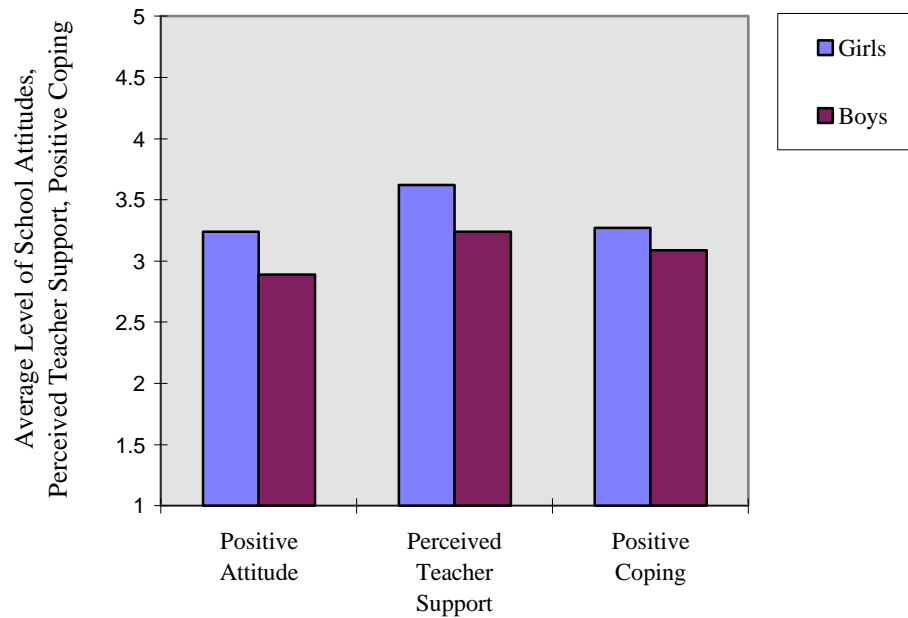
Figure 12. Positive attitudes about school, perceived teacher support, and positive coping for girls and boys in sixth grade.
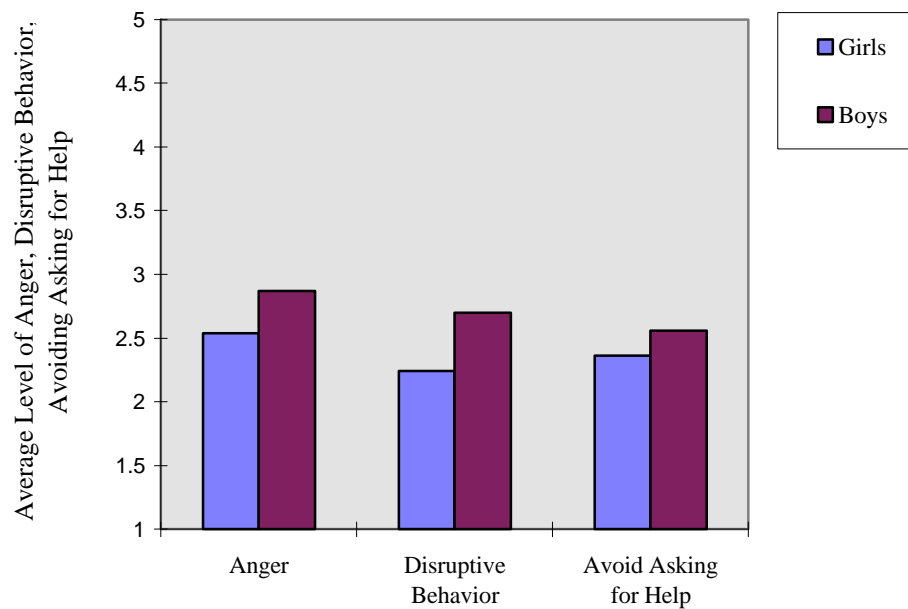

Figure 13. Anger, self report of disruptive behavior in class, and avoiding asking for help for boys and girls in sixth grade

We are Eager to Hear From You

We are available to meet with you, with your teachers, or with students and parents to discuss any of these findings, to answer questions, and in particular, to hear your insights and interpretations. You can call Carol Midgley at the office (734-763-1385), at home (734-769-0272) or send a fax (724-763-1368) or an email message (cmidgley@umich.edu). Margaret, Lidi, and Mike are also available to respond to your inquiries or to set up a meeting at your school. You can reach Margaret at her office (734-936-1999) or by email (gheen@umich.edu), as well.

Very few research studies have focused on the transition from middle to high school, and we will be in a position to provide information to you about this very important transition next year.